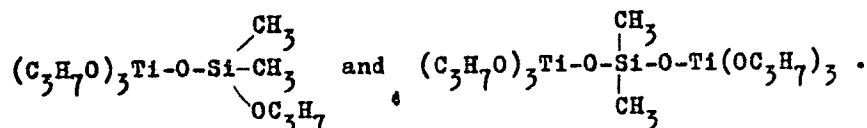


Chemical Transformations of Dialkoxo Titanium Oxides

82101
S/062/60/000/07/04/007
B015/B054

$(n-C_3H_7O)_2TiO + Cl_2SiR_2 \longrightarrow (n-C_3H_7O)_2TiCl_2 + [OSiR_2]_x$. A similar reaction takes place by the action of tetra-n-propoxy silane on the compound $Cl_2TiO \cdot 2n-C_3H_7OH$, namely $Cl_2TiO \cdot 2n-C_3H_7OH + (C_3H_7O)_4Si \longrightarrow Cl_2Ti(OC_3H_7)_2 \cdot n-C_3H_7OH + n-C_3H_7OH + [OSi(OC_3H_7-n)_2]_x$. By the linkage of dimethyl di-n-propoxy silane with di-n-propoxy titanium oxide, the following compounds were obtained:



There are 8 references: 7 Soviet and 1 British.

ASSOCIATION: Institut elementoorganicheskikh sovedineniy Akademii nauk SSSR (Institute of Elemental-organic Compounds of the Academy of Sciences, USSR)

SUBMITTED: . January 23, 1959

Card 2/2

NESMEYANOV, A.N., akademik, SIDBEL'TSYN, D.V., BERNAL, Dzhon [Bernal, J.]

In memory of Frédéric Joliot-Curie. Vop.ist.est.i tekhn. no.9:18-
27 '60. (MIRA 13:7)

(Joliot, Frédéric, 1900-1958)

5.3700

1236, 2203, 1273

87125

S/062/60/000/009/013/021
B023/B064

AUTHORS: Nesmeyanov, A. N., Vinogradova, V. N., and Makarova, L. G.

TITLE: Production of Aromatic Selenium Compounds With Aryl
Diazonium Boron Fluorides

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh
nauk, 1960, No. 9, pp. 1710-1711

TEXT: The authors report on the synthesis of aromatic selenium compounds with boron fluorides of aryl diazonium. In the introduction, methods of synthesis applied by Western authors (Refs. 2, 3 and 4) are mentioned. By decomposing boron fluorides of aryl diazonium with zinc dust in the presence of selenium tetrachloride, in acetone, diaryl selenides with the following aryls were obtained: phenyl-, para-, and orthotolyl, parachloro phenyl and paramethoxy phenyl. In the case of aryl phenyl a small amount of diaryl diselenide was obtained. The yields were not large. Only in the case of aryl phenyl the yield reached 35-40%. In other cases the yields were smaller. Diaryl selenides were separated by vacuum distillation and with vapor. They were identified by being passed over into bromides.

Card 1/2

NESMEYANOV, A.N.; FREDLINA, R.Kh.; SEMENOV, M.A.

Synthesis of dicarboxylic acids of the type $\text{HOOC}(\text{CH}_2)_m\text{C}_6\text{H}_4(\text{CH}_2)_n\text{COOH}$.
Izv. AN SSSR. Otd. khim. nauk no. 11: 1969-1973 N '60.

(MIRA 13:11)

1. Institut elementoorganicheskikh soedineniy AN SSSR.
(Acids, Organic)

15.8102 2109.2209, 1486

84508
S/190/60/002/004/009/020
B004/B056

AUTHORS: Nesmeyanov, A. N., Rybinskaya, M. I., Slonimskiy, G. I.
TITLE: Synthesis of Polymers on the Basis of β -Chlorovinylketones
PERIODICAL: Vysokomolekulyarnyye soyedineniya, 1960, Vol. 2, No. 4, pp. 526-528

TEXT: For a long time the authors have studied compounds of β -chlorovinylketones together with N. K. Kochetkov (Ref. 5), which they obtained from acylchlorides and acetylene in the presence of $AlCl_3$. In the present paper, they give a report on the reaction of p-phenylenediamine or benzidine with (β -benzoylvinyl)-trimethylammoniumchloride, which they obtained by the reaction of phenyl- β -chlorovinylketone with trimethylamine. N,N'-di-(β -benzoyldivinyl)-diamines are formed, which contain either a p-C₆H₄ group (decomposition temperature, 258 - 260°C) or a p-C₆H₄-C₆H₄ group (decomposition temperature 304 - 309°C). A direct reaction with β -chlorovinylketone leads only to N-monosubstituted products. N,N'-di-(β -benzoyldivinyl)-diamines with copper acetate chelate give

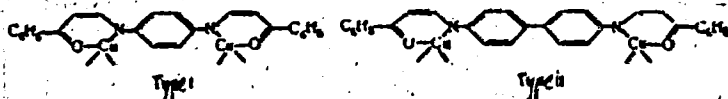
Card 1/4

84508

Synthesis of Polymers on the Basis of
β-Chlorovinylketones

S/190/60/002/004/009/020
B004/B056

compounds of the two types:



Polymerization carried out in dimethylformamide gives fine-disperse powders. In interfacial polymerization (chlorobenzene - water), brownish scales are formed after 30 days of continuous heating. As these compounds are insoluble, their molecular weight could not be determined. The authors, however, assume that it is not very high. The polymer of type I is stable up to 400°C, the polymer of type II up to 350°C. X-ray analysis of type II showed a microcrystalline structure. Magnetic susceptibility is positive (Table), and with increasing magnetic field strength it decreases. Resistivity decreases from $>10^{-13}$ ohm.cm at 200°C to $1.4 \cdot 10^{-11}$ ohm.cm at 247°C. Further, a non-melting, black polymer, which is not burned even when heated redhot, but which only slowly becomes richer in carbon, was

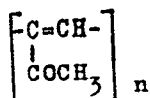
Card 2/4

84508

Synthesis of Polymers on the Basis of
β-Chlorovinylketones

S/190/60/002/004/009/020
B004/B056

produced by a separate polycondensation of methyl-β-chlorovinylketone after 20 to 30 days. On the basis of the positive iodoform reaction and the infrared spectrum, the authors presume the structure



. According to the X-ray analysis, this compound is amorphous.

Its magnetic susceptibility also decreases with increasing magnetic field strength. This polymer catalyzes the oxidation of alcohols (CH₃OH at 250°C, C₂H₅OH at 170 - 250°C) by means of air, as well as the dehydrogenation of ethanol at 350 - 400°C. These processes are continued to be investigated. The authors express their gratitude for the investigations carried out at the laboratories of INESO (Institute of Elemental-organic Compounds), IOKh (Institute of Organic Chemistry), and IKhF (Institute of Chemical Physics) of the AS USSR under the supervision of I. V. Obreimov (infrared spectra), A. I. Kitaygorodskiy (X-ray analysis), A. M. Rubinshteyn (electric and magnetic measurements), and L. A. Blyumenfel'd (epr spectra). There are 1 table and 6 references:

Card 3/4

Synthesis of Polymers on the Basis of
 β -Chlorovinylketones

84508
S/190/60/002/004/009/020
B004/B056

5 Soviet and 1 US.

ASSOCIATION: Institut elementoorganicheskikh soedineniy AN SSSR
(Institute of Elemental-organic Compounds AS USSR)

SUBMITTED: December 31, 1959

Card 4/4

NESMEYANOV, A.N., akademik; FREYDLINA, R.Kh.; BELOV, V.N., prof.; KARAPETYAN, Sh.A.; SMOL'YANINOVA, Ye.K.; SOLOV'YEVA, N.P.; OGORODNIKOVA, Ye.A.; VASIL'YEVA, Ye.I.; ZAKHARKIN, L.I.; SHEVYAKOVA, N.N.

Synthesis of macrocyclic lactones and oxalactones based on ethylene and carbon tetrachloride. Zhur. VKhO 5 no.4:371-376 '60.
(MIRA 13:12)

1. Chlen-korrespondent Akademii nauk SSSR (for Freydlina).
(Lactones)

NESMEYANOV, A.N.

D.I. Mendeleev's periodic system in organic chemistry. *Analele chimie*
15 no.2:3-49 Ap-Je '60. (EEAT 9:11)
(Chemistry, Organic) (Periodic law)

LETOV, A.M.; NESMEYANOV, A.N.; CHESTNAT, G., (Soyedinennye Shtaty Ameriki);
U ZHE-YAN [Wu J8-yang]

From addresses delivered at the opening of the Congress. Nauka 1
zhien' 27 no.10:2 O '60. (MIRA 13:10)

1. Prezident Mezhdunarodnoy federatsii po avtomaticheskomu upravleniyu
(for Letov). 2. Prezident AN SSSR (for Nesmeyanov). 3. Byvshiy
prezident Mezhdunarodnoy federatsii po avtomaticheskomu upravleniyu
(for Chestnat). 4. Assotsiatsiya po avtomatike, Kitayskaya Narodnaya
Respublika (for U Zhe-yan).
(Automatic control)

NESMEYANOV, A.N., akademik

Present and future of science; six questions answered by
Academician A.N. Nesmeyanov. Tekh.mol. 28 no.5:16-17 '60.
(MIRA 13:7)

(Science)

NESMEYANOV, A.N., akademik

Scientists advise students. Tekh.mol. 28 no.7:10-11 '60.
(MIRA 13:8)

1. Prezident AN SSSR.
(Science—Study and teaching)

5.3700(B)

6861

5(3)

S/020/60/130/05/021/061

AUTHORS:

Nesmeyanov, A. N., Academician,
Sazonova, V. A., Drozd, V. N.

B011/B005

TITLE:

Some Reactions of the Halogen Derivatives of Ferrocene.
Ferrocenylamine. Ferrocenylacetate

PERIODICAL:

Doklady Akademii nauk SSSR, 1960, Vol 130, Nr 5, pp 1030-1032
(USSR)

ABSTRACT:

The purpose of the paper is the synthesis of ferrocenylamine, ferrocenylacetate, N-ferrocenylphthalimide, N-acetylferrocenylamine, and ferrocene carboxylic acid nitrile. The paper continues previous investigations by the authors (Ref 1, together with E. G. Perevalova and O. A. Nesmeyanova: Refs 2,3).⁴ As further investigations have shown, the exchange of the halogen in halogen ferrocenes by reaction with the salt of the bivalent (and monovalent $Cu_2(CN)_2$) copper is a method generally applicable for substitution of the halogen atom in the ferrocene ring by copper-bound radicals. The substitution of the halogen in halogen ferrocenes by an acetoxy group proceeds even more smoothly than previously described by the authors in aqueous-

Card 1/3

68611

Some Reactions of the Halogen Derivatives of
Ferrocene. Ferrocenylamine. Ferrocenylacetate

S/020/60/130/05/021/061
B011/B005

alcoholic solutions by boiling with copper acetate for 15 min. The yield in ferrocenylacetate is 90% (see Scheme). N-ferrocenylphthalimide is formed by heating (135-140°) the mixture of halogen ferrocene with copper phthalimide (see Scheme). By the action of hydrazine hydrate, the N-ferrocenylphthalimide is easily transformed into ferrocenylamine with a total yield of 50%. The ferrocenylamine was identified as N-acetylferrocenylamine. The halogen may also be replaced by the phthalimide group by boiling in an aqueous-alcoholic solution for 2 h. The method described here for preparing ferrocenylamine is certainly more convenient than the methods described in references 4 and 5. Bromoferrocene reacts with copper cyanide, and gives a good yield in ferrocene carboxylic acid nitrile. The reaction proceeds less readily with chloroferrocene. Previously, the nitrile was prepared by other methods (Refs 6,7). There are 8 references, 5 of which are Soviet.

ASSOCIATION:
Card 2/3

Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
(Moscow State University imeni M. V. Lomonosov)

Some Reactions of the Halogen Derivatives of
Ferrocene. Ferrocenylamine. Ferrocenylacetate

SUBMITTED: November 12, 1959

68611

S/020/60/130/05/021/061
B011/B005

✓

Card 3/3

5.3700(B)

80000

AUTHORS: Nesmeyanov, A. N., Academician,
Sazonova, V. A., Drozd, V. N., Nikonova,
L. A.

S/020/60/131/05/029/069
B011/B117

TITLE: 1-(1'-Halogenferrocenyl) Boric Acids¹ in the Synthesis of Ferrocene¹
Derivatives

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol 131, Nr 5, pp 1088-1091 (USSR)

TEXT: The authors proved in their paper that the reaction of 1,1'-ferrocenylene diboric acid with cupric chloride or bromide performed in a mixture of benzene and water yields 1-(1'-chloroferrocenyl) and 1-(1'-bromoferrocenyl) boric acid. Cupric chloride or cupric bromide must, however, be used in a quantity corresponding to one B(OH)₂ group. The structures of 1-(1'-halogenferrocenyl) boric acids were established by means of the preparation of the corresponding halogenferrocenes by hydrolysis in the presence of zinc salts. The 1-(1'-halogenferrocenyl) boric acids react in a similar way to the aryl boric acids with mercury salts, yielding the corresponding mercury compounds of ferrocene: 1-(1'-chloroferrocenyl) mercury chloride and 1-(1'-bromoferrocenyl) mercuric bromide. They are easily symmetrized by sodium thiosulfate to yield di-1-(1'-chloroferrocenyl) mercury and di-1,1-(1'-bromoferrocenyl) mercury. From the two last-mentioned substances, the authors prepared 1'-chloro-1-iodoferrocene and

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80000

1-(1'-Halogenferrocenyl) Boric Acids in the
Synthesis of Ferrocene Derivatives

S/020/60/131/05/029/069
B011/B117

1'-bromo-1-iodoferrocene which have hitherto been unknown. The procedure used was the same as the one described for ferrocenyl mercury chloride (Ref 2). When an attempt was made to prepare heterocyclic chlorobromoferrocene by reacting cupric chloride with 1-(1'-bromoferrocenyl) boric acid, 1,1'-dichloroferrocene (cf Scheme) was obtained. The latter reaction confirms the simple substitution of the halogen in the ferrocene ring in the presence of copper salts, which has previously been established by the authors (Ref 3). There are 3 Soviet references.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
(Moscow State University imeni M. V. Lomonosov)

SUBMITTED: January 7, 1960

Card 2/2

80487

S/020/60/132/02/36/067
B011/B002

53700(B)

AUTHORS: Freydlina, R. Kh., Corresponding Member AS USSR, Chukovskaya,
Ye. Ts. Tsao-I, Nesmeyanov, A. N., Academician

TITLE: The Formation of Unsaturated Organosilicon Compounds During the
Interaction of Silicohydrides and Olefines in the Presence of
Iron Pentacarbonyl

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 132, No. 2, pp. 374-377

TEXT: The reaction between silicon hydrides and olefines in the presence of iron pentacarbonyl frequently takes place in two directions (Schemes (1) and (2)). An excess of silane however, proved to be favorable for the reaction course according to scheme (1), and develops $R'R''R'''SiCH_2CH_2R$, while an olefine excess develops $R'R''R'''SiCH=CHR$ (2). The direction of the reaction is influenced by another important factor, namely the structure of silicon hydride. Thus methyl-dichlorosilane favors the development of saturated reaction products, while triethyl silane is better suited for the development of unsaturated compounds. Thus, tetraethylsilane and a small amount of symmetric hexaethyl disilyl ethane develop during the reaction between triethyl silane

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80487

S/020/60/132/02/36/067
B011/B002

The Formation of Unsaturated Organosilicon
Compounds During the Interaction of Silicohydrides
and Olefines in the Presence of Iron Pentacarbonyl

and ethylene (molar ratio of 3:1). With a ratio of 1:5, triethyl vinyl silane develops. The authors investigated the reactions of methyl dichlorosilane and ethylene, propylene and decene-1. In the case of ethylene (Ref. 1), methyl-ethyl-dichlorosilane develops. With the molar ratios between 1:4 and 1:7, no vinyl-methyl-dichlorosilane developed. Mixtures of saturated and unsaturated products developed with the two other olefines. In the case of decene, the composition of the mixture consisting of unsaturated products (namely $\text{CH}_3\text{SiCl}_2\text{C}_{10}\text{H}_{19}$) and saturated ($\text{CH}_3\text{SiCl}_2\text{C}_{10}\text{H}_{21}$) is little changed if the ratio between silane and decene is kept between 1:2 and 5:1. The mixture of $\text{CH}_3\text{SiCl}_2\text{C}_3\text{H}_7$ (I) and $\text{CH}_3\text{SiCl}_2\text{C}_5\text{H}_9$ (II) developing from the reaction between methyl dichlorosilane and propylene (3:1), contains 75% of (I) and 25% of (II). If the ratio is 1:4, the mixture contains 24% of (I) and 76% of (II). Iron pentacarbonyl is the only catalyst of the above reaction, and acts without any cocatalysts. In reaction (2) decene acts as hydrogen acceptor and is thus hydrogenated into decane. The authors assume that a radical or cation of $\text{CH}_3\text{SiCl}_2\text{CH}_2\text{CHCH}_2\text{C}_7\text{H}_{15}$ (A) develops during the reaction, with α representing a

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80487

The Formation of Unsaturated Organosilicon
Compounds During the Interaction of Silicohydrides
and Olefines in the Presence of Iron Pentacarbonyl

S/020/60/132/02/36/067
B011/B002

positive charge or an unpaired electron. Particle A is hydrogenated during the interaction with silane, while it is dehydrogenated during the reaction with olefine (see a somewhat simplified scheme). Intensity and structure of the above substances were proven by Raman and IR-spectra (taken by L. A. Leytes). Fig. 1 shows the spectrum of (V) taken by the apparatus type IKS-14. V. F. Mironov, G. I. Nikishin are mentioned. There are 1 figure and 14 references, 13 of which are Soviet. 4

ASSOCIATION: Institut elementoorganicheskikh soedineniy Akademii nauk SSSR
(Institute of Elemental-organic Compounds of the Academy of
Sciences, USSR)

SUBMITTED: February 5, 1960

Card 3/3

NESMEYANOV, A. N.

S/020/60/132/03/32/066
B011/B008

5.3200
5.3600
AUTHORS: Kost, V. N., Sidorova, T. T., Freydlina, R. Kh.,
Corresponding Member AS USSR, Nesmeyanov, A. N., Academician

TITLE: Homolytic Addition of Hydrogen Bromide to 1-Fluoro-1,
1-Dichloropropene

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 132, No. 3,
pp. 606-608

TEXT: The authors determined in their paper the divergent behavior of 1-fluoro-1, 1-dichloropropene in the reaction of the homolytic addition from that of 1,1,1-trichloropropene. Two fluoro-dichloro-bromopropanes were obtained as a consequence of the reaction of the 1-fluoro-1, 1-dichloropropene with HBr at an ultraviolet exposure: 1-fluoro-1, 1-dichloro-3-bromopropane and 1-fluoro-1,2-dichloro-3-bromopropane at a ratio 2:1. The reaction proceeded as chain reaction of free radicals. The addition of HBr to 1,1,1-trichloro-propene leads, under equal conditions, to a single product: 1,1,2-trichloro-3-bromopropane.

Card 1/2

Homolytic Addition of Hydrogen Bromide
to 1-Fluoro-1, 1-Dichloropropene

S/020/60/132/03/32/066
B011/B008

That means, the reaction takes its course under a regrouping in the free radical developing in the meantime (similar to the case of the initiation of the reaction by benzoyl peroxide, Ref. 4). The scheme (I) illustrates the reaction of the fluoro-dichloro-propene with HBr. Apparently, the rate of regrouping of the radical $\text{CH}_2\text{BrCHCl}_2\text{F}$ is reduced considerably due to the stabilizing action of the fluorine in it. Thus, this rate gets commensurable to that of this radical with HBr. This double mode of reaction of the free radical (with or without regrouping) is observed here for the first time. The authors proved the structure of the produced fluoro-dichloro-bromopropane on schemes (II) and (III) as well as by the production of the picrates and other reactions. There are 11 references, 9 of which are Soviet.

ASSOCIATION: Institut elementoorganicheskikh sovedineniy Akademii nauk
SSSR (Institute of Elemental Organic Compounds of the
Academy of Sciences, USSR)

SUBMITTED: February 24, 1960

Card 2/2

81724

S/020/60/133/01/35/070
B011/B003

5.3700(B)

AUTHORS: Nesmeyanov, A. N., Academician, Sazonova, V. A.,
Droz, V. N., Nikonova, L. A.

TITLE: Oxyferrocenes and Their Derivatives

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 133, No. 1,
pp. 126 - 129

TEXT: Ferrocenyl-allyl ester is easily formed by heating oxyferrocene with allyl bromide in acetone in the presence of potash. By heating ferrocenyl-allyl ester at 215-220°C in nitrogen, it is decomposed up to oxyferrocene. Part of the ester remains unchanged. Claisen rearrangement could not be carried out with ferrocenyl-allyl ester (Ref. 2). The authors' considerations on the instability of the "quinoid" state in the ferrocene molecule were confirmed by experiments on the oxidation of 1,1'-dioxyferrocene with air. The molecule decomposes and separates an inorganic iron compound. The resulting cyclopentadienone was isolated as a dimer. Furthermore, the authors compared the dissociation constants of oxyferrocene and phenol, and described 1,1'-dioxyferrocene

Card 1/3

Oxyferrocenes and Their Derivatives

81724
S/020/60/133/01/35/070
B011/B003

and its derivatives. The pH-values of 0.005 M solutions of oxyferrocene or phenol in 5% alcohol, which had partly been neutralized with NaOH up to 30, 50, and 70%, were measured at 17°C by means of a glass electrode and an $\text{M}-5$ (LP-5) potentiometer. Table 1 lists the values obtained for oxyferrocene. It shows that oxyferrocene is a weaker acid than phenol. The authors synthesized 1,1'-dioxoferrocene derivatives by using 1,1'-ferrocenylene diboric acid. This acid reacts with copper acetate and forms 1,1'-ferrocenylene diacetate in a 41% yield. 1,1'-dioxoferrocene ester is obtained in a yield of 83% if a $\text{B}(\text{OH})_2$ group has previously been substituted by a halogen in this acid. When copper acetate acts upon 1-(1'-ferrocenyl halide) boric acids (synthesis: Ref. 5), the acetoxy group substitutes both the halogen and the $\text{B}(\text{OH})_2$ group. 1,1'-dibromoferrocene may also be used for the synthesis of ferrocenylene diacetate (cf. Scheme: X denotes the halogen). The frequencies characteristic of the unsubstituted ferrocene ring are missing in the infrared spectrum of ferrocenylene diacetate. Hydrolysis of the first-mentioned compound (in a nitrogen atmosphere) and subsequent acidification or blowing through of CO_2 yields yellow needles of 1,1'-dioxoferrocene, UH

Card 2/3

Oxyferrocenes and Their Derivatives

81724

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B011/B003

which is highly sensitive to air (cf. Scheme). The alkaline hydrolyzate could be used for synthesizing 1,1'-dioxyferrocene derivatives, i.e., 1,1'-dimethoxyferrocene, 1,1'-ferrocenylene dibenzoate, 1,1'-ferrocenylene dibenzosulfonate, and O,O'-(1,1'-ferrocenylene) diglycolic acid. All these derivatives are stable in air. There are 2 tables and 7 references: 2 Soviet, 4 American, and 1 Swiss.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova
(Moscow State University imeni M. V. Lomonosov)

SUBMITTED: April 8, 1960

Card 3/3

NESMEYANOV, A.N., akademik; TOLSTAYA, T.P.; ISAYEVA, L.S.; GRIB, A.V.

Nitration of triphenyloxonium and diphenylhalogenonium
cations. Dokl.AN SSSR 133 no.3:602-605 J1 '60.
(MIRA 13:7)

1. Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova.
(Oxonium compounds)
(Halogenonium compounds)

NESMEYANOV, A.N., akad.; PEREVALOVA, E.G.; SIMUKOVA, N.A.; SHEYNKER,
Yu.M.; REZHETOVA, M.D.

Formation of the 1,2,3-oxadiazine ring in the reaction of
1,1'-diacetylferrocene with aryldiazonium compounds. Dokl.AN
SSSR 133 no.4:851-854 Ag '60. (MIRA 13:7)

1. Moskovskiy gosudarstvennyy universitet imeni M.V.Lomonosova.
(Oxadiazine) (Ferrocene) (Diazonium compounds)

83136

S/020/60/133/005/014/019
B016/B060

1312

5.3700(B)

AUTHORS:

Nesmeyanov, A. N., Academician, Perevalova, E. G.,
Ustynyuk, Yu. A.

TITLE:

Ferrocenyl Methyl Lithium ¹

PERIODICAL:

Doklady Akademii nauk SSSR, 1960, Vol. 133, No. 5,
pp. 1105-1107

TEXT: The authors previously described the production of ethers of ferrocenyl carbinol (Ref. 1). In the present study they used lithium to cleave ferrocenyl carbinol methyl ether dissolved in tetrahydrofuran. The resulting ferrocenyl methyl lithium was used to produce ferrocene derivatives. The authors proved furthermore that ferrocenyl carbinol ethers can be readily obtained by heating ferrocenyl carbinol with the respective alcohols in the presence of acetic acid. In this way, the authors obtained methyl-, ethyl-, and benzyl ethers of ferrocenyl carbinol in yields of 73, 80, and 72%. The ready formation of these ethers is explained by the stability of the ferrocenyl methyl

Card 1/2

83136

Ferrocenyl Methyl Lithium

S/020/60/133/005/014/019
B016/B060

carbonium ion (Ref. 2). The reaction conditions for the production of ferrocenyl methyl lithium are analogous to those indicated by H. Gilman et al. (Ref. 3) for the cleavage of benzyl ethers. Ferrocenyl methyl lithium smoothly reacts with trimethyl chlorosilane to give (ferrocenyl-methyl)-trimethyl silane in a 68% yield. Under the action of anhydrous ferric chloride, ferrocenyl methyl lithium yields 1,2-diferrocenyl ethane. New data regarding diferrocenyl ethanes produced by condensation of formaldehyde and benzaldehyde with ferrocene (Ref. 5), as well as by Friedel-Crafts's reaction (Ref. 8), will be published at the same time. There are 8 references: 4 Soviet and 4 US.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)

SUBMITTED: April 18, 1960

Card 2/2

NESMEYANOV, A.N., akademik; GOLOVNYA, R.V.

Azobenzene as an acceptor of hydride hydrogen. Dokl.AN
SSSR 133 no.6:1337-1339 Ag '60. (MIRA 13:8)

1. Institut elementoorganicheskikh soyedineniy Akademii nauk
SSSR.

(Azobenzene) (Hydrogen)

NESMEYANOV, A.N., akad.; BORISOV, A.Ye.; NOVIKOVA, N.V.

Atomic refraction of antimony. Dokl.AN SSSR 134 no.1:100-101
S '60. (MIRA 13:8)

1. Institut elementoorganicheskikh soedineniy Akademii nauk SSSR.
(Antimony compounds)
(Mercury compounds)
(Arsenic compounds)

83900

S/020/60/134/003/013/020
B016/B054

5.3700

AUTHORS: Nesmeyanov, A. N., Academician, Nogina, O. V., and Berlin,
A. M.

TITLE: Interaction of Cyclopentadienyl Sodium¹ With Alkoxy Titanium
Chlorides¹

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol. 134, No. 3,
pp. 607-608

TEXT: The authors investigated the reactions of cyclopentadienyl sodium with alkoxy titanium chlorides, and isolated mono- π -cyclopentadienyl derivatives of titanium: cyclopentadienyl-triethoxy- and tri-n-propoxy titanium (see Diagram). They are colorless liquids distillable in vacuo and very sensitive to air moisture. The authors indicate the established and calculated yields and molecular weights of the two derivatives. As opposed to the ordinary alkoxy derivatives of titanium, the π -cyclopentadienyl-trialkoxy derivatives are not associated in solutions, not even at a concentration of 1.7 mole%. The molecular weight of $C_5H_5Ti(OC_2H_5)_3$, cryoscopically determined in benzene solution, corresponds

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83900

Interaction of Cyclopentadienyl Sodium With
Alkoxy Titanium Chlorides

S/020/60/134/003/013/020
B016/B054

ASSOCIATION: Institut elementoorganicheskikh sovedineniy Akademii nauk
SSSR (Institute of Elemental-organic Compounds of the
Academy of Sciences, USSR)

SUBMITTED: June 9, 1960

X

Card 3/3

83900

Interaction of Cyclopentadienyl Sodium With
Alkoxy Titanium Chlorides

S/020/60/134/003/013/020
B016/B054

to that of the monomeric compound. The authors proved the structure of π -cyclopentadienyl-triethoxy- and tri-n-propoxy titanium by conversion into the known (Refs. 7,8) cyclopentadienyl-titanium trichloride (see Diagram). Further, the authors allowed ethoxy-titanium trichloride to react with cyclopentadienyl sodium, and determined and calculated the physical constants of $(C_5H_5)_2Ti(OC_2H_5)Cl$. The π -cyclopentadienyl-trialkoxo derivatives of titanium are decomposed by alcohols at 70-80°C within 1 h, while corresponding tetraalkoxy titanium and cyclopentadiene are formed. The latter was isolated as cyclopentadienyl thallium. By reactions of π -cyclopentadienyl-tri-n-propoxy titanium with acetyl chloride, the authors obtained mixed chloride alcoholates of π -cyclopentadienyl titanium: 1) cyclopentadienyl-di-n-propoxy-titanium chloride which is disproportionated by vacuum distillation; 2) cyclopentadienyl-n-propoxy-titanium dichloride. Both compounds are greenish-yellow, viscous liquids decomposing under the action of air moisture, but still storable at lower temperatures. There are 8 references: 2 Soviet and 2 US.

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84673

5.3700

2209, 1318, 1312 only

S/020/60/134/006/018/031
B016/B067

AUTHORS:

Nesmeyanov, A. N., Academician, Nogina, O. V., and
Dubovitskiy, V. A.

TITLE:

Slow Dissociation of the Associates of the Alkoxy and
Alkyl Derivatives of Metals in Solutions

PERIODICAL:

Doklady Akademii nauk SSSR, 1960, Vol. 134, No. 6,
pp. 1363-1366

TEXT: In earlier papers (Refs. 1,2) the authors described the slow dis-
integration of associates of the alkoxy titanium derivatives in dilute
benzolic solutions. In the present investigation they observed that the
phenomenon occurs also in the solutions of organic compounds of other
metals. It was found that the degree of association in the alkoxy
derivatives of tin, zirconium, and aluminum cryoscopically determined
decreases with time and that within some hours it becomes equal to one.
Fig. 1 shows the curves of the variation with time in the molecular
weights of $(n-C_3H_7O)_4Sn$ in benzolic solution with a concentration of

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84673

Slow Dissociation of the Associates of the
Alkoxy and Alkyl Derivatives of Metals
in Solutions

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B016/3067

0.100 mol% (Curve 1) and an analogous curve (2) for $(n-C_4H_9O)_4Zr$ (concentration 0.161 mol%). The production method of tetra-n-propoxy-tin and of tetra-n-butoxy-zirconium (Refs. 4, 5) and of other products used is described. Fig. 2 gives the analogous curves (1, 2, 3) for $(iso-C_4H_9)_2AlOC_2H_5$ in benzolic solution (concentration 0.099 mol%) and for $(n-C_3H_7O)_3Al$ as well as for $(iso-C_4H_9O)_3Al$. The authors state that at constant concentration and temperature the dimer of triethyl aluminum in dilute benzolic solution slowly dissociates to the monomer stage. Fig. 3 shows a curve similar to those already obtained for $(C_2H_5)_3Al$, and Fig. 4 shows a curve for $(n-C_4H_9O)_4Ti$ (1) in nitrobenzolic solution as well as (2) for $(n-C_3H_7O)_4Ti$ in dioxane solution. Curve (3) illustrates the variation in the molecular weight of tetra-n-propoxy-titanium dissolved in cyclohexane. There are 4 figures and 23 references: 7 Soviet, 7 US, 2 French, 3 German, and 4 British.

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84573

Slow Dissociation of the Associates of the
Alkoxy and Alkyl Derivatives of Metals
in Solutions

S/020/60/134/006/018/031
B016/B067

ASSOCIATION: Institut elementoorganicheskikh soedineniy Akademii
nauk SSSR (Institute of Elemental-organic Compounds of
the Academy of Sciences, USSR)

SUBMITTED: July 12, 1960

Card 3/3

RESMEYANOV, A.N., akademik; KRAVTSOV, D.N.

Arylmercury derivatives of nitrosophenols. Dokl. AN SSSR 135
no.2:331-334 M '60. (MIRA 13:11)

L. Institut elementoorganicheskikh soedineniy AN SSSR.
(Phenol) (Mercury organic compounds)

86043

S/020/60/135/003/027/039
B016/B054

15.8114

also 1164

AUTHORS: Nesmeyanov, A. N., Academician, Rubinshteyn, A. M.,
Dulov, A. A., Slinkin, A. A., Rybinskaya, M. I., and
Slonimskiy, G. L.

TITLE: Study of Catalytic Properties of Polymers Produced on the
Basis of Methyl- β -chloro-vinyl Ketone 1

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol 135, No 3,
pp. 609 - 612

TEXT: The authors report on the continuation of their investigations of the properties of polymers produced on the basis of methyl- β -chloro-vinyl ketone (Refs. 1,2). These polymers show important electrical and magnetic properties; besides, they activate the oxidation and dehydrogenation of alcohols. In the present paper, the authors studied their physical properties, particularly their catalytic activity. Methyl- β -chloro-vinyl ketone polycondenses itself automatically when standing for 20-25 days with simultaneous separation of HCl. The formula $H(-C-CH-)_nCl$ is



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Study of Catalytic Properties of Polymers S/020/60/135/003/027/039
 Produced on the Basis of Methyl- β -chloro-vinyl B016/B054
 Ketone

ascribed to the resulting mixture of polymers. The best polycondensation is attained in a sealed ampoule. Otherwise, too much triacetyl benzene is formed. On prolonged heating to 400°C in vacuum (12 torr), the polymers change (with simultaneous separation of water). Their carbon content increases. Apparently, there occurs a croton polycondensation on two adjacent acetyl groups each within the chain, or a polycondensation between individual chains by acetyl groups. The authors assume that practically both processes take place, since a certain oxygen amount of the carbonyl groups is always left in the polymer. The authors studied the properties of polymers heated with and without ferric chloride at $400^{\circ}\text{C}/12$ torr for 6 h. Table 2 and Fig. 1 show their most important physical characteristics as well as those of activated carbon and graphite. A comparison with activated carbon (natural carbon polymer) shows that the polymers investigated have a very small specific surface (S) and a relatively large amount of unpaired spins. Fig. 1 shows data of the change in specific electrical conductivity (σ) with temperature. Therefrom, the authors calculated the activation energy of the conductivity (E_{σ} , Table 2). They consider it possible that these polymers¹⁵ are semiconductors with a

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Study of Catalytic Properties of Polymers S/020/60/135/003/027/039
 Produced on the Basis of Methyl- β -chloro-vinyl B016/B054
 Ketone

forbidden-zone width of 1.6 eV in the temperature range of 160-350°C. The catalytic activity of the polymers was studied, besides that of activated carbon and graphite, by the example of oxidation of toluene with air to benzene and benzaldehyde in a continuous apparatus at 370-380°C. The authors conclude from the results that the polymers are very active in this reaction. They think it important that the polymer with a specific surface of $\sim 0.3 \text{ m}^2/\text{g}$ delivers the same yield of oxide products as activated carbon with a surface of $600 \text{ m}^2/\text{g}$, i.e., the specific activity of the polymer exceeds that of activated carbon by three orders of magnitude. The authors point out that it is unclear as yet what is the reason for such an increase in activity of the polymer. They think it possible that this activity is due to an increased concentration of spins on the very small surface of the polymer. Further parallel catalytic and physical investigations are recommended by the authors. There are 1 figure, 3 tables, and 7 Soviet references.

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Study of Catalytic Properties of Polymers S/020/60/135/003/027/039
Produced on the Basis of Methyl- β -chloro-vinyl B016/B054
Ketone

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk
SSSR (Institute of Elemental-organic Compounds of the
Academy of Sciences USSR). Institut organicheskoy khimii
im. N. D. Zelinskogo Akademii nauk SSSR (Institute of
Organic Chemistry imeni N. D. Zelinskiy of the Academy of
Sciences USSR)

SUBMITTED: August 14, 1960

Card 4/4

NESMEYANOV, A.N., akademik, glav. red.; TOPCHYEV, A.V., akademik,
zam. glav. red.; ISAKOVA, O.V., otv. red.; LIKHTEINSHTEYN,
Ye.S., otv. red.; SHUNKOV, V.I., otv. red.; YEGOROVA, N.F.,
tekhn. red.

Viktor Sergeevich Kulebakin. Izd.2., dop. Vstup. stat'ia
K.S.Bobova. Bibliografiia sostavlena A.P.Epifanovoi. Mo-
skva, 1961. 57 p. (Materialy k biobibliografiu uchenykh
SSSR. Seriya tekhnicheskikh nauk: Energetika, no.4)

(MIRA 15:10)

1. Akaderiya nauk SSSR.

(Bibliography—Kulebakin, Viktor Sergeevich, 1891-)

VREDEN-KOBETSKAYA, T.O.; NESMEYANOV, A.N., akademik, glavnyy red.;
TOPCHIEV, A.V., akademik, zam.glavnogo red.; ISAKOVA, O.V.,
otv.red.; LIKHTENSHTAYN, Ye.S., otv.red.; SHUNKOV, V.I., otv.red.;
RYLINA, Yu.V., tekhn.red.

Sergei Ivanovich Vavilov, 1891-1951. Izd.2., dop. Vstup. stat'ia
V.L.Lavshina. Bibl.sost.T.O.Vreden-Kobetaskoi. Moskva, 1961. 164 p.
(Materialy k bibliografii uchenykh SSSR. Ser.fiziki, no.13)
(MIRA 14:6)

1. Akademiya nauk SSSR.

(Vavilov, Sergei Ivanovich, 1891-1951)

ISAKOVA, O.V.; NESMEYANOV, A.N., akademik, glav. red.; TOPCHIEV,
A.V., akademik, zam. glav. red.; LIKHTENSHTEYN, Ye.S., otv.
red.; SHONKOV, V.I., otv. red.

Vasilii Grigor'yevich Fesenkov. Vstup. stat'ia N.B.Divari.
Bibliografiia sostavlena O.V.Isakovoi. Moskva, 1961. 114 p.
(Materialy k bibliografii uchenykh SSSR. Seriia astronomii,
vyp.1) (MIRA 15:3)
(Fesenkov, Vasilii Grigor'evich, 1889-)

NEOIRIFERANE, A. M.

09/02
5/062/61/000/001/007/016
3101/3220

2209, 1274, 1273

S 3700

AUTHORS:

Perevalova, E. G., Simukova, B. A., Eklisma, T. V.,
Kharin, P. D., and Kharin, A. E.

TITLE:

Interaction between ferrocene derivatives and aryl diazonia

PERIODECAL: Investiya khimicheskikh nauk 3238. Otdeleniye khimicheskikh nauk,
no. 1, 1961, 77-83

NOTE: The authors have shown in Refs. 1-3 that ferrocene reacts with
aryl diazonia to form aryl ferrocenes. The present paper deals with
the arylation of p-tolyl, ethyl, ferrocene, and aryl and
carboxy ferrocenes. It was possible to arylate p-tolyl ferrocene with
a series of p-tolyl diazonium and this resulted in the formation of hetero-
annular di-(p-tolyl) ferrocene:



diazonium and methyl ferrocene resulted in a mixture of phenylated methyl
ferrocenes from which it was possible to isolate the heteroannular ethyl-
phenyl ferrocene in a poor yield.

$C_5H_5FeC_5H_4CH_3 \xrightarrow{C_6H_5N_2^+Cl^-} CH_3C_5H_4FeC_5H_4C_6H_5$. The ethyl ferrocene reacted
similarly (20% yield). Heteroannular diphenyl-, dibutyl-, and di-
benzyl ferrocenes reacted with p-nitro-phenyl diazonium salts in the same way
as observed in the case of diazyl ferrocene. The bond between the
iron and the cyclopentadienyl ring was split, and derivatives of
1,2,3-oxa-diazine were formed. Reactions took place in the reaction
between p-nitro-phenyl diazonium and the diethyl ester of ferrocene
dicarboxylic acid. It was proved possible to isolate chromatographically
a reduced amount of p-nitro-phenyl-dicarbonyl ferrocene, but the
ferrocene ring was destroyed at the same time (appearance of iron ions).
Monosubstituted ferrocenes, such as acetyl ferrocene and carbomethoxy
ferrocene, react with p-nitro-phenyl diazonium like ferrocene, but with
a lower yield of arylation products. Monosubstituted ferrocenes formed both
homannular and heteroannular p-nitro-phenyl acetoferrocene:
Card 2/3



+ $C_5H_5FeC_5H_3(COOCH_3)_2$. The ethyl ester of ferrocene carboxylic
acid reacts to form heteroannular p-nitro-phenyl carbomethoxy ferrocene
(yield 75%). The presence or absence of the non-substituted cyclopenta-
dienyl ring was always established spectroscopically. The free mono-
and dicarboxylic acids of ferrocene as well as their sodium salts
together with p-nitro-phenyl diazonium gave mixtures from which the
arylation products could not be isolated. E. T. Zerkova and M. Krivtsov
assisted in the experiments. There are 14 Soviet-Bloc references.

ASSOCIATION: Moscow State University Institute in E. V. Lomonosov
(Moscow State University Inst. E. V. Lomonosov)

SUBMITTED: July 20, 1959

Card 3/3

S/081/62/000/014/009/039
B166/B144

AUTHORS: Nesmeyanov, A. N., Freydlina, R. Kh., Kost, V. N.,
Khorlina, M. Ya., Sidorova, T. T., Petrova, R. G.,
Terent'yev, A. B.

TITLE: Connection between the structure of polyalkylhalide radicals
and their ability to regroup in solution

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 14, 1962, 178, abstract
14Zh41 (Tr. po khimii i khim. tekhnol. [Gor'kiy], no. 1,
1961, 106-115)

TEXT: A review of the authors' work on the homolytic addition of HBr,
CCl₃, Br, Br₂, C₆H₅SH and C₆H₅CH₂SH to olefins XCCL₂CY = CH₂ (I), where
X = Cl, F, H, CH₃ and Y = H, Cl, Br, CH₃. The results of the work show
that the aforesaid reactions proceed according to the general scheme:
 $I + HBr \rightarrow HCCLXCYCICH_2Br + CClX = CYCH_2Br + HCCLXCYCICH_2Cl$. This
indicates that the initially formed polyalkylhalide radicals (PR) are

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Connection between the structure ...

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B166/B144

rearranged and then stabilized either by adding an H or by dehalogenation; moreover the latter leads to the chain of reaction being continued. The exception is compounds with $X = F$, which along with rearranged products also give products which are not rearranged. It was found that the rearrangement of PR tends towards the formation of more stable radicals. A table of the relative stability of the PR is drawn up:

$\dot{C}Cl_2CHClCH_2X > CCl_3\dot{C}HCH_2X$ (when $X = Br, Cl, CCl_3, C_6H_5$);
 $\dot{C}Cl_2CCl(CH_3)CH_2Br > CCl_3\dot{C}(CH_3)CH_2Br$; $\dot{C}Cl_2CCl_2CH_2Br > CCl_3\dot{C}ClCH_2Br$;
 $\dot{C}HClCHClCH_2Br > CHCl_2\dot{C}HCH_2Br$; $CHCl_2\dot{C}ClCH_2Br > \dot{C}HClCCl_2CH_2Br$;
 $CH_3\dot{C}ClCHClCH_2Br > CH_3CCl_2\dot{C}HCH_2Br$; $CFCl_2\dot{C}HCH_2Br \approx CFClCHClCH_2Br$;
 $\dot{C}FClCBFClCH_2Br \approx CFCl_2\dot{C}BrCH_2Br$. 15 references. [Abstracter's note:
 Complete translation.]

✓

Card 2/2

NESMEYANOV, A.N.; REUTOV, O.A.; GUDKOVA, A.S.

Some reactions of methyl β, β' -dichlorovinyl ketone. Izv. AN
SSSR, Otd. khim. nauk no.2:260-264 F '61. (MIRA 14:2)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.
(Ketone)

NESMEYANOV, A.N.; VOL'KENAU, N.A.

Some chromium arencarbonyls. Izv. AN SSSR. Otd. khim. nauk no.2:
367-368 F '61. (MIRA 14:2)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Chromium carbonyl)

S/030/61/000/003/001/013
B105/B215

AUTHOR: Nesmeyanov, A.N., Academician

TITLE: Opening speech of A.N. Nesmeyanov, Academician,
President of the Academy of Sciences USSR

PERIODICAL: Vestnik Akademii nauk SSSR, no. 3, 1961, 4 - 11

TEXT: The following 18 members of the Akademiya nauk SSSR (Academy of Sciences USSR) deceased last year, i.e., since the last general assembly: Academicians: I.E. Grabar', history of art; N.S. Shatskiy, geology; I. A. Trakhtenberg, economy; A.A. Skochinskiy, mining; A.F. Ioffe, physics; I.A. Orbeli, philology and history. Corresponding Members of the AS USSR: S.A. Lavochkin, aircraft designer; A.K. Kapustinskiy, chemistry; M.A. Arzhanov, jurisprudence; V.I. Veyts, power economy; V.P. Bushinskiy, soil expert; V.A. Florin, hydroengineering; V.I. Kovalenkov, cables; V.A. Nikolayev, geology; P.F. Antipin, metallurgy; V.V. Popov, entomology; N.K. Pshenitsyn, chemistry; O.D. Levitskiy, geology. Furthermore, A.N. Nesmeyanov submitted the 1960-report of the Academy of Sciences USSR. ✓

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Opening speech of ...

S/030/61/000/003/001/013
B105/B215

The aims of the Academy are the following: to meet the increasing demands in national economy and culture; the largest possible support of the Communist Party in the realization of their resolutions. The annual increase in the number of experts is approximately 9%. The number of scientists at present amounts to 350,000. Out of a total of 10,500 Doctors, and 95,000 Candidates, there are now 161 Academicians, 369 Corresponding Members, 1362 Doctors, and 7618 Candidates of Sciences occupied by the Academy of Sciences USSR. In the whole country, there are approximately 3,500 independent institutions of various kinds 1600 of which are scientific research institutes. During 10 years, 31 institutes were founded within the system of departments of the Academy, and another 41 in the Sibirskoye otdeleniye (Siberian Department) and their branches. The following institutes are mentioned: In the Otdeleniye fiziko-matematicheskikh nauk (Department of Physical and Mathematical Sciences): the institut Fiziki vysokikh davleniy (Institute of Physics of High Pressures); Akusticheskiy institut (Acoustics Institute), institut Poluprovodnikov (Institute of Semiconductors); institut Prikladnoy geofiziki (Institute of Applied Geophysics); institut Zemnogo magnetizma, ionosfery i rasprostraneniya radiovoln (Institute of Terrestrial Magnetism, Ionosphere, and Wave Propa-

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B105/B215

Opening speech of ...

gation); institut Fiziki Zemli (Institute of Physics of the Earth); institut Fiziki atmosfery (Institute of Physics of the Atmosphere). In the Otdeleniye khimicheskikh nauk (Department of Chemical Sciences): the institut Elementoorganicheskikh soedineniy (Institute of Elemental Organic Compounds); institut Organicheskoy khimii (Institute of Organic Chemistry) in Kazan'; institut Elektrokhimii (Institute of Electrochemistry); institut Neftekhimicheskogo sinteza (Institute of Petrochemical Synthesis); institut Khimii prirodnikh soedineniy (Institute of Chemistry of Natural Compounds) In the Otdeleniye biologicheskikh nauk (Department of Biological Sciences): institut Biologicheskoy fiziki (Institute of Biophysics); institut Evolyutsionnoy fiziologii (Institute of Evolution Physiology); institut Tsitologii (Cytological Institute); institut Radiatsionnoy i fiziko-khimicheskoy biologii (Institute of Radiation and Physicochemical Biology). In the Otdeleniye geologo-geograficheskikh nauk (Department of Geological and Geographical Sciences): Geologicheskii institut (Geological Institute); institut Geologii rudnykh mestorozhdeniy, petrografii, mineralogii i geokhimii (Institute of Geology of Mineral Deposits, Petrography, Mineralogy, and Geochemistry); institut Mineralogii, ✓

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Opening speech of ...

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geokhimi i kristallokhimii redkikh elementov (Institute of Mineralogy, Geochemistry and Crystallochemistry of Rare Elements). In the Otdeleniye tekhnicheskikh nauk (Department of Technical Sciences): institut Radio-tekhniki i elektroniki (Institute of Radio Engineering and Electronics); institut Elektronnykh upravlyayushchikh mashin (Institute of Electronic Control Machines); institut Elektromekhaniki (Electromechanical Institute). In the Departments of Social Sciences: institut Mirovoy ekonomiki i mezhdunarodnykh otnosheniy (Institute of World Economics and International Relations); institut Russkogo yazyka (Institute of the Russian language); institut Afriki (African Institute); institut Ekonomiki mirovoy sotsialisticheskoy sistemy (Institute of Economy of the Socialist World System). In the Sibirskoye otdeleniye (Siberian Department): institut Matematiki s vychislitel'nyim tsentrom (Mathematical Institute with Calculation Center); institut Gidrodinamiki (Institute of Hydrodynamics); institut Teoreticheskoy i prikladnoy mekhaniki (Institute of Theoretical and Applied Mechanics); institut Radiofiziki i elektroniki (Institute of Radiophysics and Electronics); institut Yadernoy fiziki (Institute of Nuclear Physics); institut Avtomatiki i elektrometrii (Institute of Auto-

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Opening speech of ...

mation and Electrometry); institut Teplofiziki (Institute of Heat Physics); institut Geologii i geofiziki (Institute of Geology and Geophysics); institut Eksperimental'noy biologii i meditsiny (Institute of Experimental Biology and Medicine). Furthermore, the shortage of workrooms in the institut Geografii (Institute of Geography), institut Mirovoy literatury (Institute of World Literature), and the Laboratoriya gidrogeologicheskikh problem (Laboratory of Hydrogeological Problems) was pointed out. Some of the Institutes have to be transferred from Moscow. The Institut lesa (Forest Institute) has been transferred to Krasnoyarsk, and the Morskoy gidrofizicheskiy institut (Marine Hydrophysical Institute) to Sevastopol'. The Academy started to build a residence for scientists in Pushchino near Serpukhov. Near Leningrad, the construction of a large Department of the Fiziko-tekhnicheskiy institut (Physicotechnical Institute) was carried out. The Institutes of Koltusha (Pavlovo) and Pulkovo are being developed. Construction work is conducted in Kazan', Ufa, Sverdlovsk, Apatity (Kol'skiy Peninsula) and especially in the Novosibirsk residence for scientists. During the last 10 years, the Academy of Sciences USSR turned its branches into Academies of the USSR. Above all, such scientific cen-

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B105/B215

Opening speech of ...

ters have to be established in Siberia, Dal'niy Vostok ((Soviet) Far East), in the Urals and in the Povolzh'ye (Volga Region) (Gor'kiy, Kuybyshev, Saratov, and Stalingrad). The number of scientific publications increased from 13,948 papers in 1950, to 72,800 in 1960. Publications of books increased by a threefold, and those of periodicals by a ninefold. The amount of publications by the Institut nauchnoy i tekhnicheskoy informatsii (Institute of Scientific and Technical Information) increases continuously. Since 1953, the number of Referativnyy zhurnal editions increased by the 42-fold. So far, the Institute collected over 3,000,000 papers. The annual output of the printing works of the Academy of Sciences USSR at present amounts to 60,000 papers. In chemistry, scientists concentrate on high-molecular compounds. In the field of biology, good results were obtained in descriptive and field biology, faunology, floristics, soil science, and agronomic sciences. The establishment of a number of institutes and the expansion of the Institut' mikrobiologii (Institute of Microbiology) strongly contributed to this development. In the field of metallurgy, the Institut metallurgii (Institute of Metallurgy) introduced the oxygen method and vacuum melting. As to power economy, the Academy of Sciences USSR developed the scientific bases for a uniform power economy

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B105/B215

Opening speech of ...

system (Yedinaya energeticheskaya sistema) EEC (YeES). Geological sciences. Large deposits of iron ore were discovered in the Yakovlevskoye rayon of the Kursk anomaly, and deposits of diamonds, petroleum and gas, nonferrous metals and rare metals in the Turgay rayon. Furthermore, an Otdeleniye ekonomicheskikh nauk (Department of Economic Sciences) is to be established. Archaeology. Important finds were made in old Russian cities such as Novgorod, Moscow, Kiyev, Chernigov and in (Soviet) Central Asia and (Soviet) Far East. In conclusion, A.N. Nesmeyanov said it was the aim of the Academy of Sciences USSR that Soviet science should hold the first place in the whole world. This, however, requires qualitative and quantitative improvements of the scientific teams. Ye.K. Fedorov, Academician, Scientific Secretary in Chief, was called upon to give a report on "The results of scientific activity and the introduction of finished scientific studies of the Academy of Sciences USSR for the Year 1960".

ASSOCIATION: Akademiya nauk SSSR (Academy of Sciences USSR)

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20938

5 3700 2203, 1164

S/062/61/000/003/004/013
B117/B208

AUTHORS: Nesmeyanov, A. N., Nogina, O. V., and Dubovitskiy, V. A.

TITLE: Synthesis of dialkoxy (aryloxy) titanium oxides by ester interchange of di-n-propoxy-titanium oxide

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, no. 3, 1961, 437-441

TEXT: The authors outlined the possibility of obtaining dialkoxy (aryloxy) titanium oxides and bis(triethyl-siloxy)titanium oxide by ester interchange of the easily accessible di-n-propoxy titanium oxide. $(C_2H_5O)_2TiO$ and $(i-C_5H_{11}O)_2TiO$, $(n-C_6H_{13}O)_2TiO$, $(C_6H_5O)_2TiO$, $[(C_2H_5)_3SiO]TiO$, hitherto not yet described, were prepared in this way. Diphenoxy titanium oxide was also prepared in the form of its molecular compound with phenol. All experiments were carried out with completely dry raw materials under exclusion of atmospheric moisture. The ultrared spectra of these compounds were obtained on a double-beam UR-spectrophotometer. The spectra were taken of solutions of the substances in carbon disulfide and carbon tetra-

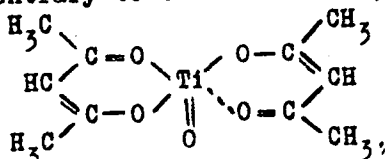
Card 1/3

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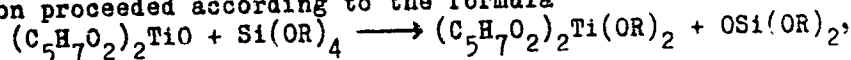
S/062/61/000/003/004/013
B117/B208

Synthesis of dialkoxy (aryloxy)...

chloride, as well as of a paste in vaselin oil. But no characteristic frequencies were found in the range of $600-1400\text{ cm}^{-1}$ that could be assigned to the $\text{Ti}=\text{O}$ bond. Also titanium oxide bis-acetylacetonate was prepared by reaction of di-n-propoxy titanium oxide with acetylacetone. This compound was prepared by hydrolysis by A. Jamamoto, S. Kambara (see below) who have assigned it a cyclic dimeric structure. Cryoscopic determination of the molecular weight of titanium oxide bis-acetylacetonate showed, contrary to this statement, that this compound has obviously the structure



and is a monomer in dilute solutions. The attempt of carrying out the addition to the $\text{Ti}=\text{O}$ double bond in titanium oxide bis-acetylacetonate gave no addition product but dialkoxy titanium bis-acetylacetonate. Thus, the reaction proceeded according to the formula



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Synthesis of dialkoxy (aryloxy)...

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where $R = C_2H_5$; $n-C_3H_7$. The authors thank L. A. Kazitsyna and G. A. Rudenko of the Moskovskiy gosudarstvennyy universitet (Moscow State University) for determining the IR spectra of di-n-propoxy titanium oxide samples. N. A. Chumayevskiy is thanked for taking the IR spectra of the remaining compounds, which was done at the laboratoriya akad. I. V. Obreimova (Laboratory of Academician I. V. Obreimov) of the authors' association. There are 5 figures and 8 references: 5 Soviet-bloc and 3 non-Soviet-bloc. The reference to the English-language publication reads as follows: A. Jamamoto, S. Kambara, J. Amer. Chem. Soc. 79, 4344, 1957.

ASSOCIATION: Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR (Institute of Elemental-organic Compounds, Academy of Sciences USSR)

SUBMITTED: January 8, 1960

Card 3/3

NESMEYANOV, A.

An open road to the planets. Vest. Vozd. Fl. no. 4:43 Ap '61.
(MIRA 14:7)

1. President Akademii nauk SSSR.
(Astronautics)

22516

S/062/61/000/004/005/008
B118/B208

5.3700 2209

AUTHORS: Braynina, E. M., Freydlina, R. Kh., and Nesmeyanov, A. N.

TITLE: A new method of synthesizing zirconium tetraacyloxy derivatives

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye khimicheskikh nauk, no. 4, 1961, 608-612

TEXT: The authors of the present paper studied the synthesis of zirconium tetraacyloxy derivatives by allowing zirconium tetraacetyl acetate to react with aliphatic carboxylic acids. Organic acids were found to react when heated with zirconium tetraacetyl acetate, and to give neutral salts, separating acetyl acetone, according to the equation $(C_5H_7O_2)_4Zr + RCOOH \longrightarrow (RCOO)_4Zr + C_5H_8O_2$. This reaction gives a quantitative yield of the end product after 3-8 hr. The reactions of zirconium tetraacetyl acetate with valerianic, capronic, and enanthic acid were performed in the stream of dry nitrogen, by using these acids in excess. Liquid products were obtained which crystallized when stored, but

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A new method of synthesizing...

partially decomposed with high-vacuum distillation. Zirconium tetraacetyl acetate reacted with ω -chloro-undecanoic, lauric, palmitic, and stearic acid in a molar ratio of 1 : 4 of the components, in benzene or octane solution. Zirconium tetrapalmitate and zirconium tetrastearate resulted in the form of light powders. They partially decomposed on recrystallization. The advantage of this method is that the products separated from the reaction mixture are analytically pure without further purification. This was confirmed by tests for C, H, Zr, Cl. Substitution of acyloxy groups for the acetyl acetate groups also takes place in the respective manganese and cobalt compounds. Reaction of manganese triacetyl acetate and cobalt triacetyl acetate with palmitic and stearic acid yielded manganese dipalmitate, manganese distearate, and cobalt distearate. The latter could also be obtained by reacting cobalt diacetyl acetate with stearic acid in a dry nitrogen stream. There are 17 references: 3 Soviet-bloc and 14 non-Soviet-bloc. The three references to English-language publications read as follows: R. N. Kapoor, R. C. Mehrotra, Chem. Industr. 68 (1958); R. N. Kapoor, R. C. Mehrotra, J. Chem. Soc. 422 (1959); S. Prasad, V. Rama Reddy, J. Indian Chem. Soc. 35, 907 (1958).

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S/062/61/000/004/005/008

B118/B208

A new method of synthesizing...

ASSOCIATION: Institut elementoorganicheskikh sovedineniy Akademii nauk
SSSR (Institute of Elemental Organic Compounds, Academy of
Sciences USSR)

SUBMITTED: February 6, 1960

Card 3/3

NESMEYANOV, A.M.; BORISOV, A.Ye.; NOVIKOVA, N.V.

Propenyl stereoisomers of tri- and pentavalent antimony. Izv.AN
SSSR Otd.khim.nauk no.4:612-617 Ap '61. (MIRA 14:4)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Antimony compounds)

NESMEYANOV, A.N.; BORISOV, A.Ye.; SAVEL'YEVA, I.S.; KRUGLOVA, N.V.

Series of radicals arranged according to the rate at which they
are split off a mercury atom by hydrochloric acid. Izv. AN SSSR
Otd. khim. nauk no. 4: 726-727 Ap '61. (MIRA 14:4)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Radicals (Chemistry))

NESMEYANOV, A.M.; BORISOV, A.Ye.; NOVIKOVA, N.V.

Compounds of the type $(RCH\ CR')_3Sb\ (C_2H_5)_2$. *Izv. AN SSSR Otd. khim.*
nauk no.4:730 Ap '61. (MIRA 14:4)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Antimony compounds)

NESMEYANOV, A.N., akademik; PEREVALOVA, E.G.; GUBIN, S.P.; NIKITINA, T.V.;
PONOMARENKO, A.A.; SHILOVTSEVA, L.S.

Properties of phenylferrocene: Dokl. AN SSSR no.4:888-891 Ag '61.
(MIRA 14:7)

1. Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova.
(Ferrocene)

5.3700

2209, 1164, 1282

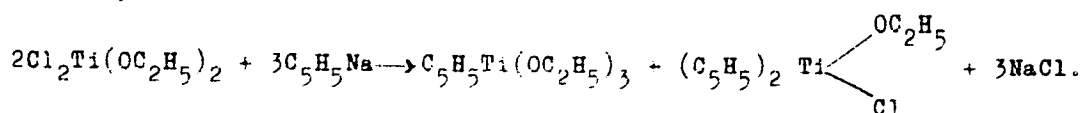
23589
S/062/61/000/005/004/009
B118/B208

AUTHORS: Nesmeyanov, A. N., Nogina, O. V., and Berlin, A. M.

TITLE: Mono- π -cyclopentadienyl derivatives of titanium

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh nauk, no. 5, 1961, 804 - 807

TEXT: The authors studied the reaction of sodium cyclopentadienyl with diethoxy-titanium dichloride



The separated liquid cyclopentadienyl-triethoxy-titanium which was analytically confirmed is not associated in solution, contrary to the common alkoxy-titanium derivatives. Its molecular weight, cryoscopically determined in benzene, corresponds to that of the monomer compound, even in a concentration of 1.7 mole %. Its structure was confirmed by conversion with acetyl chloride to cyclopentadienyl titanium trichloride $\text{C}_5\text{H}_5\text{TiCl}_3$.

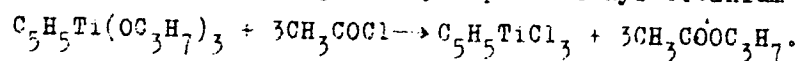
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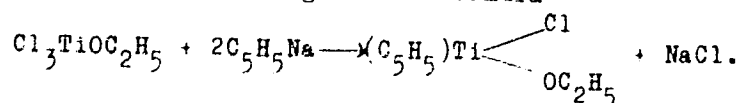
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Mono- π -cyclopentadienyl...

Its melting point is by 20°C higher than that found by R. D. Gorsich (see below). The second yellow, crystalline product of the above reaction corresponds to dicyclopentadienyl titanium ethoxy-chloride. To obtain only cyclopentadienyl trialkoxy-titanium in the reaction of sodium cyclopentadienyl with alkoxy titanium chlorides, tri-n-propoxy-titanium chloride was used as titanium derivative, which gave, as was expected, cyclopentadienyl-tripropoxy-titanium $C_5H_5Ti(OC_3H_7)_3$ in a yield of 96 %. With acetyl chloride the latter gives cyclopentadienyl titanium trichloride:



The reaction of sodium cyclopentadienyl with ethoxy-titanium trichloride took place according to the formula



The attempt of an ester interchange of cyclopentadienyl triethoxy-titanium with propyl alcohol was unsuccessful, as this alcohol converts this

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S/062/61/000/005/004/009
B118/B208

Mono- π -cyclopentadienyl...

π -cyclopentadienyl compound to tetrapropoxy-titanium (C_3H_7O)₄Ti under mild conditions. Ethyl alcohol reacts similarly forming tetraethoxy-titanium (95 % yield) and cyclopentadiene (97 % yield, in the form of thallium cyclopentadienyl). To obtain mixed chloride alcoholates of π -cyclopentadienyl titanium, $C_5H_5Ti(OR)Cl_2$ and $C_5H_5Ti(OR)_2Cl$, π -cyclopentadienyl propoxy-titanium was allowed to react with acetyl chloride (1:2 and 1:1), where $C_5H_5Ti(OC_2H_5)Cl_2$ and $C_5H_5Ti(OC_2H_5)_2Cl$, respectively, resulted. The reaction products are green-yellow viscous liquids, not stable to atmospheric moisture, but stable when stored at 1 - 5°C. There are 11 references: 3 Soviet-bloc and 8 non-Soviet-bloc. The 4 references to English-language publications read as follows: C.L. Sloan, W. A. Barber, J. Amer. Chem. Soc. 81, 1364 (1959); M. A. Lynch, I. C. Brantley, Chem. Abstr. 52, 11126 (1958); A. K. Fischer, G. Wilkinson, J. Inorgan. Nuclear Chem. 2, 149 (1956); R. D. Gorsich, J. Amer. Chem. Soc. 80, 4744 (1958).

ASSOCIATION: Institut elementoorganicheskikh soedineniy Akademii nauk SSSR (Institute of Elemental-Organic Compounds of the Academy of Sciences USSR)

Card 3/4

Mono- π -cyclopentadienyl...

SUBMITTED: April 8, 1960

23589

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B118/B208

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Card 4/4

NESMEYANOV, A.N.; BORISOV, A.Ye.; SAVEL'YEVA, I.S.; OSIPOVA, M.A.

Products of the addition of mercury salts to disubstituted
acetylenes. Izv. AN SSSR. Otd.khim.nauk no.7:1249-1252 J1 '61.
(MIRA 14:7)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Acetylene) (Mercury salts)

NESMEYANOV, A.N.; RYBINSKAYA, M.I.; RYBIN, L.V.

Synthesis of β -aroylacrylic acids and their amides. Izv. AN
SSSR. Otd.khim.nauk no.7:1292-1296 J1 '61. (MIRA 14:7)

1. Institut elementoorganicheskikh sovedinaty AN SSSR.
(Acrylic acid)

NESMEYANOV, A.N.; RYBIN, L.V.; RYBINSKAYA, M.I.

Addition of thiophenol to β -cyan vinyl ketones. Izv.
AN SSSR. Otd.khim.nauk no.8:1451-1453 Ag '61. (MIRA 14:8)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Benzenethiol)
(Ketones)

53700

27486
8/062/61/000/009/001/014
B117/B101

AUTHORS: Nesmeyanov, A. N., Borisov, A. Ye., and Novikova, N. V.

TITLE: Isopropenyl and vinyl compounds of tri- and pentavalent antimony

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh nauk, no. 9, 1961, 1578-1582

TEXT: Isopropenyl and vinyl derivatives of antimony of the types R_3Sb , R_5Sb , R_4SbX , R_3SbX_2 ; where $R=CH_2-\overset{\text{CH}_3}{\underset{|}{C}}-$, $CH_2=CH-$; $X = Cl, Br, I$, were

synthesized in the present work. The authors had previously prepared cis- and trans propenyl derivatives of tri- and pentavalent antimony (Ref. 1: Izv. AN SSSR. Otd. khim. n., 1960, 147) and pentavinyl antimony (Ref. 2: Izv. AN SSSR. Otd. khim. n., 1960, 952). Triisopropenyl antimony ($C_9H_{15}Sb$) and trivinyl antimony (C_6H_9Sb) were obtained by reaction of antimony trichloride with isopropenyl lithium, or vinyl magnesium bromide,

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B117/B101

Isopropenyl and vinyl compounds ...

respectively. The compounds thus obtained react readily with halogens, forming derivatives of pentavalent antimony: $R_3Sb + X_2 \rightarrow R_3SbX_2$. Triisopropenyl antimony dibromide ($C_9H_{15}SbBr_2$), a white crystalline substance, m.p. $136^\circ C$, reacts with isopropenyl lithium to give penta-isopropenyl antimony ($C_{15}H_{25}Sb$), a white amorphous substance, m.p. $60^\circ C$. Treatment of trivinyl antimony dibromide ($C_6H_9SbBr_2$, $n_D^{20} 1.6480$) with vinyl magnesium bromide leads to pentavinyl antimony ($C_{10}H_{15}Sb$), a slightly greenish liquid. Quantitative analysis showed that both pentaalkenyl antimony compounds were sufficiently pure. By treating these compounds dissolved in $CHCl_3$ with equimolecular quantities of bromine at $-5^\circ C$, the authors obtained tetraisopropenyl stibonium bromide ($C_{12}H_{20}SbBr$, leaf-shaped shiny crystals, m.p. $125-135^\circ C$) and tetravinyl stibonium bromide ($C_8H_{12}SbBr$, needle-shaped crystals, m.p. $53-54^\circ C$), respectively. Treatment with equimolar quantities of iodine at room temperature tetraisopropenyl stibonium iodine ($C_{12}H_{20}SbI$, m.p. $163-164^\circ C$) and, respectively, tetravinyl

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Isopropenyl and vinyl compounds ...

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B117/B101

stibonium iodine ($C_8H_{12}SbI$, m.p. 68-70°C) in crystalline form. On heating on an oil bath at 180°C, penta-isopropenyl and pentavinyl antimony form triisopropenyl antimony and trivinyl antimony, respectively. This was confirmed by bromination of the triisopropenyl antimony obtained, respectively distillation of the trivinyl antimony, which in the former case yielded triisopropenyl antimony dibromide, m.p. 137-138°C, and in the latter a colorless liquid, n_D^{20} 1.5595, which was identical with trivinyl antimony. Trivinyl and triisopropenyl antimony react with thallium trichloride to give trivinyl antimony dichloride ($C_6H_9SbCl_2$, liquid) and triisopropenyl antimony dichloride ($C_9H_{15}SbCl_2$, white crystals, m.p. 102-103°C). In this reaction thallium is transformed to the monochloride. There are 3 references: 2 Soviet and 1 non-Soviet.

ASSOCIATION: Institut elementoorganicheskikh soedineniy Akademii nauk SSSR (Institute of Elemental Organic Compounds of the Academy of Sciences USSR)

SUBMITTED: February 15, 1961
Card 3/3

5.3200

27487
S/062/61/000/009/002/014
B117/B101

AUTHORS: Nesmeyanov, A. N., Borisov, A. Ye., Golubeva, Ye. I., and Kovredov, A. I.

TITLE: Reaction of free radicals with unsymmetric organic mercury compounds

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye khimicheskikh nauk, no. 9, 1961, 1582-1589

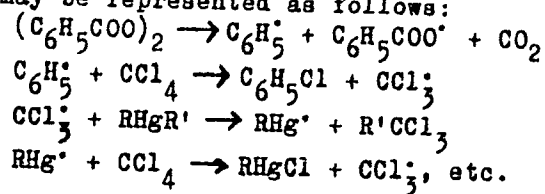
TEXT: The authors studied the interaction of free radicals with a number of asymmetric saturated organo-mercury compounds with a view to elucidating the order in which radicals are split off by a radical reagent and establishing a sequence of radicals. The benzoyl peroxide initiated reaction of carbon tetrachloride with saturated organo-mercury compounds, discovered by A. Ye. Borisov (Ref. 8: Izv. AN SSSR. Otd. khim. n. 1951, 524) was used as example for this study. The mercury compounds used were of the type $RHgR'$ listed in the table. They were prepared either (compounds 11, 12, 13, and 14) by the method developed by R. Kh. Freydlina, K. A. Kocheshkov, and A. N. Nesmeyanov (Ref. 9: Zh. obshch. X

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Reaction of free radicals ...

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B117/B101

khimi, 5, 1171 (1935)) or by means of the Grignard reaction. It was observed that in the reaction $\text{RHgR}' + \text{CCl}_4 \rightarrow \text{RHgCl} + \text{R}'\text{CCl}_3$ the free radical CCl_3^\cdot always combines in higher yield with a radical further left in the following sequence than with one further right:
2,4,6- $(\text{CH}_3)_3\text{C}_6\text{H}_2$, $\alpha\text{-C}_{10}\text{H}_7$, p- $\text{CH}_3\text{C}_6\text{H}_4$, o- $\text{CH}_3\text{C}_6\text{H}_4$, m- $\text{CH}_3\text{C}_6\text{H}_4$, C_6H_5 , C_2H_5 , C_4H_9 , $\text{C}_6\text{H}_5\text{CH}_2$, C_6H_{11} . If the radicals are further apart in this sequence, the reaction is frequently nearly quantitative. For a chain reaction with radical mechanism the order found shows a certain similarity to the sequence set up by M. S. Kharasch (J. Amer. Chem. Soc., 48, 3130 (1926); ibid., 54, 674 (1932)) for the heterolytic reaction. The course of the chain reaction may be represented as follows:



Card 2/

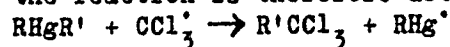
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B117/B101

Reaction of free radicals ...

The course of the reaction is therefore determined by



since in the further course of the reaction the RHg radical only participates the regeneration of the chloromethyl radical. The sequence established on the basis of decreasing proton affinity of the radicals corresponds to one based on decreasing affinity of the radicals towards the free radical $\text{CCl}_3 \cdot$. There are 1 table and 14 references: 5 Soviet-

bloc and 9 non-Soviet-bloc. The two most recent references to English-language publications read as follows: R. E. Dessy, G. F. Reynolds, Jin Young-Kim, J. Amer. Chem. Soc. 81, 2683 (1959); S. Winstein, T. G. Traylor, J. Amer. Chem. Soc. 77, 3741 (1955).

ASSOCIATION: Institut elementoorganicheskikh sovedineniy Akademii nauk SSSR (Institute of Elemental Organic Compounds of the Academy of Sciences USSR)

SUBMITTED: March 11, 1961

Card 3/

NESMEYANOV, A.N.; ANISMOV, K.N.; VALUYEVA, Z.P.

Preparation of ethylcyclopentadienyltricarbonylmanganese.
Izv.AN SSSR.Otd.khim.nauk no.10:1780-1783 0 '61. (MIRA 14:10)

1. Institut elementoorganicheskikh soedineniy AN SSSR.
(Manganese)

NESMEYANOV, A.N.; PEREVALOVA, E.G.; SHILOVTSEVA, L.S.

Reactions between organomagnesium compounds and (Ferrocenylmethyl)
trialkylammonium salts. Izv.AN SSSR.Otd.khim.nauk no.11:1982-1985
N '61. (MIRA 14:11)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.
(Magnesium organic compounds) (Ammonium compounds)

FREYDLINA, R.Kh.; KOPYLOVA, B.V.; NESMEYANOV, A.N.

Synthesis of α -chloro ω -thiocarboxylic acids. Izv. AN SSSR. Otd. -
Khim. nauk no. 11: 1985-1989 N '61. (MIRA 14:11)

1. Institut elementoorganicheskikh soedineniy AN SSSR.
(Acids, Organic)

NESMEYANOV, A.N.; FREYDLINA, R.Kh.

Synthesis of 3,3,3-trichloro-1-propene. Izv. AN SSSR. Otd. khim. nauk
no. 11:2102 N '61. (MIRA 14:11)

1. Institut elementarnoorganicheskikh soyedineniy AN SSSR.
(Propene)

~~NESMEYANOV, A.N.~~; NOGINA, O.V.; BERLIN, A.M.; GIRSHOVICH, A.S.; SHATALOV, G.V.

Acyl and alkoxyl derivatives of bis-(cyclopentadienyl)titanium and
the refraction increment of the $-C_5H_5Ti$ group. Izv. AN SSSR
Otd.khim.nauk no.12:2146-2151 D '61. (MIRA 14:11)

1. Institut elementoorganicheskikh soyedineniy Akademii nauk SSSR.
(Titanium compounds)

NESMEYANOV, A.N.; RYBINSKAYA, M.I.; RYBIN, L.V.

Addition of nucleophilic reagents to β -cyanovinyl ketones. Izv.
AN SSSR Otd.khim.nauk no.12:2152-2159 D '61. (MIRA 14:11)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Ketones) (Nucleophilic strength)

NESMEYANOV, A.N.; BORISOV, A.Ye.; SAVEL'YEVA, I.S.

Kinetics of decomposition of symmetrical organomercury compounds.
Izv. AN SSSR Otd.khim.nauk no.12:2241-2242 D '61. (MIRA 14:11)

1. Institut elementoorganicheskikh soyedineniy AN SSSR.
(Mercury organic compounds) (Chemical reaction, Rate of)

NESMEYANOV, A.N., akademik

Dawn of a new era. Vest. AN SSSR 31 no.4:10-11 Ap '61.
(MIRA 14:4)
(Astronautics)

NESMEYANOV, A.N.; GOLOVNYA, R.V.

Splitting of hydride hydrogen off organic compounds by means
of azobenzene. Zhur. ob. khim. 31 no.4:1067-1076 Ap '61.
(MIRA 14:4)

(Hydrogen)

(Azobenzene)

NESMEYANOV, A.N., akademik

Dawn of a new era. Priroda 50 no.5:3-4 My '61.
(Astronautics)

(MIRA 14(5))

NESMEYANOV, A.N., akademik

Outstanding scientist and research organizer; on the 70th anniversary
of the birth of S.I.Vavilov. Priroda 50 no.5:37-42 My '61.
(MIRA 14:5)

(Vavilov, Sergei Ivanovich, 1891-1951)

NESMEYANOV, A.N.

S.I.Vavilov, prominent scientist and organizer of Soviet
science; on his 70th birthday. Usp.fiz.nauk 75 no.2:205-213
0 '61. (MIRA 14:10)
(Vavilov, Sergei Ivanovich, 1891-)

NESMEYANOV, A.N., akademik; GOLOVNYA, R.V.

Indole closure of azobenzene with cyclohexanone. Dokl. AN SSSR
136 no.4:836-839 F '61. (MIRA 14:1)

1. Institut elementoorganicheskikh soedineniy Akademii nauk
SSSR.

(Azobenzene) (Cyclohexanone) (Indole)

5.3700

2209, 1273, 1164

20359
S/020/61/136/005/017/032
B103/B208

AUTHORS: Nesmeyanov, A. N., Academician, Kochetkova, N. S.,
and Materikova, R. B.

TITLE: Acetyl derivatives of pentaethane diferrocene

PERIODICAL: Doklady Akademii nauk SSSR, v. 136, no. 5, 1961, 1096-1098

TEXT: The authors correct the composition of the substance previously termed "diferrocenyl ethane" by them (Ref. 1) (melting point 135°C). Actually, this is a mixture of isomers: diferrocenyl ethane-1,1 (melting point 147-149°C), and diferrocenyl ethane-1,2 (melting point 192-192.5°C, small quantity). This mixture was obtained by reacting ferrocene with 1,2-dichloro ethane in the presence of anhydrous $AlCl_3$ (in addition to pentaethane diferrocene, PEDF). The authors were able to isolate the isomers by a modified treatment of the reaction products, i.e., after chromatographic purification on aluminum oxide in benzene - n-heptane mixture (1:1). Diferrocenyl ethane-1,2 is identical with that obtained by A. N. Nesmeyanov and I. I. Kritskaya (Refs. 4, 5), and

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S/020/61/136/005/017/032

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Acetyl derivatives of pentaethane ...

A. N. Nesmeyanov, E. G. Perevalova, and Yu. T. Ustynyuk (Ref. 6). The authors further correct the confusion (Refs. 4,5,9,10) of the condensation product of formaldehyde with ferrocene with a substance of the

structure $\text{C}_{10}\text{H}_8\text{Fe} \begin{array}{c} \text{CH}_2 \\ \diagup \quad \diagdown \\ \text{CH}_2 \end{array} \text{C}_{10}\text{H}_8\text{Fe}$ (see Ref. 11). Actually, this

condensation product was 1,2-diferrocenyl ethane. The authors acylated PEDF (Ref. 2) with acetic anhydride in the presence of 85% phosphoric acid, and obtained monoacetyl PEDF. This is a yellow powder, well soluble in alcohol, acetone, and benzene, slightly soluble in water and ether. Acylation by acetyl chloride in the presence of anhydrous aluminum chloride in methylene chloride (as the solvent) gave diacetyl PEDF and several polyacetyl PEDF. The former is an orange-yellow powder, and was recrystallized from n-heptane. The authors found that these acylation results confirm the structure of PEDF previously assumed by them. N. A. Chumayevskiy studied the infrared spectra of the afore-mentioned acetyl derivatives. They disclosed a carbonyl group, and a free

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ferrocene ring in monoacetyl PEDF. Diacetyl PEDF also contains the carbonyl group, but its two acetyl groups belong to two different rings of PEDF. The presence of two non-substituted rings in PEDF is thus thought to be confirmed. Both PEDF and its acetyl derivatives are amorphous, and have no distinct melting point. On heating, they gradually darken, and soften at 100°C. The heating curve taken with Kurnakov's ITK-55 (PK-55) pyrometer up to 200°C reveals neither exothermal nor endothermal effects. V. M. Kozhin and Ye. I. Yarembash are thanked for thermographic measurements. Yu. Yu. Samitov determined the spectra of nuclear magnetic resonance, which indicate an absence of methyl groups in PEDF. There are 1 figure, 1 table, and 11 references: 6 Soviet-bloc and 5 non-Soviet-bloc.

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Reactions of halo derivatives of ethyl- and acetylferrocene.
Dokl. AN SSSR 137 no.1:102-105 Mr-Apr '61. (MIRA 13:12)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.
(Ferrocene)

FREYDLINA, R.Kh.; KOST, V.N.; KHORLINA, M.Ya.; NESMEYANOV, A.N., akademik

Rearrangements in the homolytic addition of hydrogen bromide to
poly(halo alkenes). Dokl. AN SSSR 137 no.2:341-344 Mr '61.
(MIRA 14:2)

1. Institut elementoorganicheskikh soedineniy AN SSSR. Chlen-korres-
pondent AN SSSR (for Freydlina).
(Hydrogen bromide) (Unsaturated compounds)